

REMARKS

Claims 1-40 are pending. Claims 16-39 have been withdrawn from consideration.

Claims 1, 9 and 40 have been amended herein. Support for the amendments is found at page 8, lines 9-34 and page 23, lines 15 to 23.

Applicants' Response to Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-5, 7-12, 14-15 and 40 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,251,728 to Patelmo et al. in view of applicant admitted prior art. In response thereto, applicant has amended claims 1, 9 and 40 to more distinctly claim the subject matter of the invention. Specifically, applicant has removed the phrase "is formed in accordance with a film thickness of the protection insulating film 5-10 nm" and replaced it with the phrase "is formed from the same thermal oxide film as the protective insulating film."

Applicants respectfully submit that this limitation is not disclosed in Patelmo et al., nor would one of ordinary skill in the art combine this limitation with Patelmo et al. Patelmo et al. specifically teaches the bird's beak structure having been formed from the tunnel oxide film 26. See FIG 23. The office action relies on this disclosure of a bird's beak formation. See page 3 of the current Office Action. However, applicants have amended the claims to recite that the bird's beak is formed from the protective insulating material 18 not the tunnel oxide film 12A.

The Office Action maintains that it would be obvious to one skilled in the art to make the invention of Patelmo et al. in combination with the protective insulating film of the admitted related art. The Office Action asserts it would be obvious "because it would have protected the gate structure."

Applicants respectfully submit that it would not be obvious to add another bird's beak structure from the protective insulating film layer from the interpoly dielectric layer 31 of Patelmo et al., (which the Office Action has identified as equivalent to the protective insulating film). There is no motivation or suggestion which would lead one skilled in the art to make the combination with the related art. One skilled in the art would not find it advantages to include a protective film with the bird's beak structure in the Patelmo et al. device. Patelmo et al. is forming the bird's beak structure purposefully from the tunnel oxide film 25, 26. Col. 3, lines 45-57. There is no teaching or suggestion to form the bird's beak from the dielectric layer 31.

Also, applicants note that Patelmo et al. does not disclose the dielectric layer 31, overlaying all the sidewalls of gate regions 27c and b. This is because the separation of gate regions 27 c and b is not performed until after the formation of dielectric layer 31. See FIGs. 19 and 22, column 6 lines 41-50.

Thus, forming the bird's beak from the dielectric layer 31 and placing the dielectric layer on both sides of the memory transistor 74, would destroy the function of the Patelmo et al. invention.

The Office action additionally asserts that protective film 66 of Patelmo et al. is equivalent for claim 5 not dielectric film 31 as is set forth for claim 1. The structure of film 66 per FIG 23 is to bury the entire device after every device is structured. Hence, there is no teaching or motivation to form the bird's beak structure from firm 66. Therefore, one skilled in the art would not be motivated to make the combination as the Office Action suggests specifically for the rejection of claim 5.

Amendment under 37 C.F.R. §1.111
Attorney Docket No. 020244
Serial No. 10/083,533

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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